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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,463	07/29/2003	Frederick Hicks	RD 02038	7309

7590 12/14/2006  
KEVIN E. MC VEIGH  
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EXAMINER

LAO, MARIALOUISA

ART UNIT PAPER NUMBER

1621

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/629,463

Applicant(s)

HICKS, FREDERICK

Examiner

MLouisa Lao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

This Office Action supercedes the Office Action mailed October 6, 2006 to clarify the Office's standing on the current case, as requested by the applicant's agent, Mr. Steve Weyer in a telephone interview on December 5, 2006.

#### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-18, drawn to a method for arylating a nucleophile *[sic]*, comprising reacting the nucleophile with a substrate aromatic compound, ArX, in the presence of a copper catalyst, a base and water, wherein Ar is aryl, heteroaryl or alkenyl, X is halo, sulfonate or phosphonate, the base comprises an alkaline earth carbonate, bicarbonate, hydroxide or phosphate, and the copper catalyst comprises a copper atom or ion and a ligand, classified in class 564, various subclasses.
  - II. Claim 19, drawn to method for arylating a HN-containing heterocycle, comprising reacting the HN-containing heterocycle with a substrate aromatic compound, ArX, according to the reaction scheme:  $\text{ArX} + \text{HN-containing heterocycle} \rightarrow \text{ArN-containing heterocycle}$  in the presence of copper catalyst, base, water; wherein Ar is aryl, heteroaryl or alkenyl, X is halo, sulfonate or phosphonate, the base comprises alkaline earth carbonate, bicarbonate, hydroxide or phosphate, and the copper catalyst comprises a copper atom or ion and a ligand, classified in class 564, various subclasses.

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III. Claim 20, drawn to method for arylating a HN-containing compound according to the formula  $\text{HN}(\text{R}^1)\text{R}^2$ , comprising reacting the HN-containing compound with a substrate aromatic compound,  $\text{ArX}$ , according to the reaction scheme:  $\text{ArX} + \text{HN}(\text{R}^1)\text{R}^2$  react to form  $\text{ArN}(\text{R}^1)\text{R}^2$ , in the presence of a copper catalyst, base, water; wherein Ar is aryl, heteroaryl or alkenyl, X is halo, sulfonate or phosphonate, R~ is H, alkyl or aryl  $\text{R}^2$  is according to the formula:  $\text{R}^3(\text{C}=\text{O})\text{CH}_3$ , wherein  $\text{R}^3$  is H, alkyl, aryl, heteroaryl, alkenyl,  $-\text{OR}^5$  or  $-\text{NR}^6_2$ , and  $\text{R}^5$  and  $\text{R}^6$  are each independently alkyl, aryl, or  $\text{R}^7-\text{S}(\text{=O})_2\text{CH}_3$  wherein  $\text{R}^7$  is alkyl or aryl, the base comprises an alkaline earth carbonate, bicarbonate, hydroxide or phosphate, and the copper catalyst comprises a copper atom or ion and a ligand, classified in class 564, various subclasses.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I-III are directed to related processes. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed are directed to arylation of a nucleophile engaging a plurality of reactants with a myriad of probable substituents with numerous permutations of combinations that can lead to numerous versions of the product. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.
3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction were not required because the

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inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

4. Claims 1, 19 and 20 are generic to the following disclosed patentably distinct species:

A. Nucleophile

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

B. Ar

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

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## C. X

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

## D. B of base

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

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E. Copper

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

F. Ligand

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

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## G. ArX

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

H. R<sup>1</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.



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I. R<sup>2</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

J. R<sup>3</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

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K. R<sup>5</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

L. R<sup>6</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

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M. R<sup>7</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

N. R<sup>8</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

O. R<sup>9</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is

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required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

P. R<sup>10</sup>

The species are independent or distinct because these are compounds and/or substituents that are drawn to different structures can invariably exhibit different attributes. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, *in correlation to an elected invention*, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the disclosed species that is elected, in correlation to an elected invention, and consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

5. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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6. A telephone call was not made to the applicant's agent to request an oral election to the above restriction requirement, due to the complexity of the art. MPEP § 812.01.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a disclosed species (in correlation to an elected invention) or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MLouisa Lao whose telephone number is 571-272-9930. The examiner can normally be reached on 8:30am to 5:30pm Mondays to Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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